

## PATENT COOPERATION TREATY

## PCT

REC'D 16 JUL 2004

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## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

|   |   |   |
|---|---|---|
| Applicant's or agent's file reference<br><b>ILEX:085WO</b>  | <b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) |   |
| International application No.<br><b>PCT/US03/29080</b>  | International filing date (day/month/year)<br><b>18 September 2003 (18.09.2003)</b>   | Priority date (day/month/year)<br><b>19 September 2002 (19.09.2002)</b> |
| International Patent Classification (IPC) or national classification and IPC<br><b>IPC(7): A61K 31/685, 31/66; C07F 9/40, 9/38 and US Cl.: 514/76, 107; 558/155, 161; 562/21</b>  |   |   |
| Applicant<br><b>ILEX ONCOLOGY RESEARCH</b>  |   |   |
| <p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>3</u> sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of <u>4</u> sheets.</p> <p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the report</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of report with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p> |   |   |
| Date of submission of the demand<br><b>19 April 2004 (19.04.2004)</b>   | Date of completion of this report<br><b>25 May 2004 (25.05.2004)</b>  |   |
| Name and mailing address of the IPEA/US<br>Mail Stop PCT, Attn: IPEA/US<br>Commissioner for Patents<br>P.O. Box 1450<br>Alexandria, Virginia 22313-1450<br>Facsimile No. (703) 305-3230   | Authorized officer<br><i>Robert Shiao</i><br>Robert Shiao<br>Telephone No. (571)272-1600                                      |   |

Form PCT/IPEA/409 (cover sheet)(July 1998)

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US03/29080

## I. Basis of the report

## 1. With regard to the elements of the international application:\*

- ☒ the international application as originally filed.
- ☒ the description:  
pages 1-67 \_\_\_\_\_ as originally filed  
pages NONE \_\_\_\_\_, filed with the demand  
pages NONE \_\_\_\_\_, filed with the letter of \_\_\_\_\_.
- ☒ the claims:  
pages 68-75 \_\_\_\_\_, as originally filed  
pages NONE \_\_\_\_\_, as amended (together with any statement) under Article 19  
pages NONE \_\_\_\_\_, filed with the demand  
pages NONE \_\_\_\_\_, filed with the letter of \_\_\_\_\_.
- ☐ the drawings:  
pages NONE \_\_\_\_\_, as originally filed  
pages NONE \_\_\_\_\_, filed with the demand  
pages NONE \_\_\_\_\_, filed with the letter of \_\_\_\_\_.
- ☐ the sequence listing part of the description:  
pages NONE \_\_\_\_\_, as originally filed  
pages NONE \_\_\_\_\_, filed with the demand  
pages NONE \_\_\_\_\_, filed with the letter of \_\_\_\_\_.

## 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

## 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in printed form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☒ The amendments have resulted in the cancellation of:

- ☒ the description, pages N/A
- ☒ the claims, Nos. N/A
- ☒ the drawings, sheets/fig N/A

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.  
PCT/US03/29080

**V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. STATEMENT**

|                               |                    |     |
|-------------------------------|--------------------|-----|
| Novelty (N)                   | Claims <u>1-30</u> | YES |
|                               | Claims <u>NONE</u> | NO  |
| Inventive Step (IS)           | Claims <u>1-30</u> | YES |
|                               | Claims <u>NONE</u> | NO  |
| Industrial Applicability (IA) | Claims <u>1-30</u> | YES |
|                               | Claims <u>NONE</u> | NO  |

**2. CITATIONS AND EXPLANATIONS**

Claims 1-30 are neither anticipated nor rendered obvious over the art of record, and therefore are novel, having inventive step, and industrial applicability. This invention relates to phosphate compounds of formula (I) as agents treating hypercalcemia. The closest prior art is Kawabe et al. US 5,153,183, discloses methylenediphosphonic compound of formula (I) as agents treating osteoporosis. The difference between prior art and instant claims is that instant compounds have one phosphate, while Kawabe et al. are diphosphosponic compounds. Suggestion for modification of above reference to obtain the instant compounds/compositions, and methods of use, has not been found.

## PATENT COOPERATION TREATY

## PCT

## NOTE OF INFORMAL COMMUNICATION WITH THE APPLICANT

(PCT Rule 66.6)

|   |   |  |
|---|---|--|
| International application No.<br>PCT/US03/29080 | Applicant's or agent's file reference<br>ILEX:085WO | Date of informal communication<br>(day/month/year)<br>25 May 2004 (25.05.2004) |
| Applicant<br>ILEX ONCOLOGY RESEARCH             |   |  |

|   |   |   |
|---|---|---|
| <u>Communication</u><br><input checked="" type="checkbox"/> by telephone<br><input type="checkbox"/> personal | <u>Participants</u><br><input type="checkbox"/> Applicant:<br><input checked="" type="checkbox"/> Agent: HIGHLANDER, Steven L.<br><input checked="" type="checkbox"/> Examiner(s): Robert Shiao | <input checked="" type="checkbox"/> Identity checked<br><input type="checkbox"/> authorization checked<br><input type="checkbox"/> personally known |
|---|---|---|

Summary of communication:

Applicants requested for International Preliminary Examination Report (i.e., PCT/IPEA/409) for Chapter II examination.

☐ An extension of time limit is granted (Form PCT/IPEA/427).

☒ A copy of this note is being sent to the applicant with Form PCT/IPEA/429.

PCT/IPEA/424.

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|---|---|
| Name and mailing address of the IPEA/US<br>Mail Stop PCT, Attn: IPEA/US<br>Commissioner for Patents<br>P.O. Box 1450<br>Alexandria, Virginia 22313-1450<br>Facsimile No. (703) 305-3230 | Authorized officer<br><i>Valerie Bell-Harris for</i><br>Robert Shiao<br>Telephone No. (571)272-1600 |
|---|---|

Form PCT/IPEA/428 (July 1992)